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TAGLIO ENGRAVING.

RENTON.



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INTAGLIO ENGRAVING

BY EDWARD RENTON

AUTHOR OF "HERALDRY IN ENGLAND," ETC., ETC.

GEORGE BELL & SONS

LONDON : YORK STREET, COVENT GARDEN

NEW YORK : 66, FIFTH AVENUE, AND

BOMBAY : 53, ESPLANADE ROAD

CAMBRIDGE : DEIGHTON, BELL & CO.





III.



IV.

BAEYLONIAN CYLINDERS (FROM THE BRITISH MUSEUM).

INTAGLIO ENGRAVING

PAST AND PRESENT BY

EDWARD RENTON



LONDON

GEORGE BELL AND SONS

1896



CHISWICK PRESS:—CHARLES WHITTINGHAM AND CO.
TOOKS COURT, CHANCERY LANE, LONDON.

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PREFACE.

IN placing this work on "Intaglio Engraving" before those who may take an interest in the subject, I am influenced by the knowledge that no book in the English language has recently treated this especial branch of Art. Here and there short articles are to be found in encyclopædias and books of reference, but even in these the authors appear to be cautious, and unwilling to give full details concerning *the actual mode of production* of the works under discussion.

I am induced, therefore, to place the information at my command before the reader in order to comply with what I believe to be a genuine desire for reliable information on the subject, and in arranging my facts it became necessary

for me to discover how little was generally known of the Art before I could approximately estimate how very much remained to be told.

It sometimes happens that much may be handed down by tradition which cannot be found on record, and in this respect I am extremely fortunate from the fact that my grandfather, my father, and two of my uncles were all experienced Intaglio engravers. Following in their footsteps, I personally had the opportunity of gaining a knowledge of many interesting particulars not generally known, which the following pages afford the opportunity of revealing to the public for the first time.

EDWARD RENTON.

28, ST. GEORGE'S ROAD,
REGENT'S PARK, N.W.
July, 1896.

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INTAGLIO ENGRAVING

PAST AND PRESENT.

PART I.

HISTORICAL.

THE object of the contents of the following pages is to place before the reader in an entertaining form many interesting facts concerning the history, development, and practice of this somewhat neglected art.

There are many Intaglio engravers on stone now existing in England and on the Continent, but the demand for examples of really high-class classical gem engraving is at the present time ex-

tremely limited ; and although a taste for the Fine Arts prevails throughout nearly all classes of society, the fashion of the present day leads the wealthy and refined to liberally patronize painting, sculpture, etching, and even process reproductions, while ignoring the beautiful and difficult art of Intaglio engraving.

It is strange that glyptics should receive so little attention in the present day, and that the impetus which this charming art received in England during the last century should have been allowed to decline. But the neglect of both cameo and intaglio engraving is not restricted to this country ; it is general, and even more conspicuous on the Continent than here.

For instance, how few there are who care to inspect the beautiful collections of ancient as well as comparatively modern examples of intaglio engraving specially arranged for admiration in various mu-

seums, not only in England, but also on the Continent, compared with those who consider it a duty to visit foreign galleries of paintings and sculpture, our own Royal Academy, and the minor exhibitions of paintings throughout the country.

Possibly not ten nor even six well-informed persons in a hundred could discern the difference between a false and a real intaglio engraving, or would have much idea of the method by which engraving on fine stones is really accomplished. These facts one cannot but admit indicate not only a lack of appreciation for an ancient and beautiful art, but also a somewhat lamentable absence of knowledge on a subject which, during even the last century, formed part of the polite education of the wealthy and refined.

It is not the purpose of this work to lead the reader into detailed accounts of the various collections of ancient and modern intaglio engravings on view in

England and abroad, or to give long lists of engravers, this task having been already accomplished by competent authors whose works exist, and to which reference is consequently easy.

At the outset it is well to avow that these pages are written with the intention of rendering the subject as interesting as possible, and to induce a desire on the part of the reader to gain further knowledge on the subject of gem engraving as an agreeable and refined pastime. Subsequently, the drier details which may become necessary to a more intimate acquaintance with the subject will be sought out by the student from his own free will and inclination.

The history of intaglio engraving carries us back so far into the "dim obscurity of the past," that it becomes a matter of conjecture when and where the art was really invented.

Professor Lartet, in his "Reliquiæ





THE ROTARY DRILL USED FOR ENGRAVING GEMS (AS
DEPICTED IN AN EGYPTIAN WALL PAINTING).

Aquatunicæ," gives a drawing of a mammoth engraved by a cave-man on a portion of a tusk of some animal. When it is remembered that the only tools of these primitive artists were the points and edges of flint flakes, their rude per-



INTAGLIO ENGRAVED BY A CAVE-DWELLER.

formances must be looked upon with some amount of wonder and admiration. The time which has elapsed from the date of this early evidence of an art which reached its ultimate perfection in the palmy days of ancient Greece, is more easily imagined than accurately computed.

6 *Intaglio Engraving*

Coming down to more reliable data, it is certain that the Egyptians engraved upon hard stones at a surprisingly early period, but some doubt exists whether even they were the originators of the real art of gem engraving ; possibly the secret of engraving the harder stones was first discovered in India.

A strong argument in favour of this supposition is derived from the fact that India from time immemorial has been celebrated for a natural wealth of diamonds, while Egypt, on the contrary, has been totally barren in this respect. Taking into consideration that without the aid of the diamond not one stroke of *true* intaglio engraving on hard stones, such as the sapphire or the garnet, could ever have been accomplished, is it not reasonable to suppose that the art would probably begin its existence in a country where the most important material required was to be obtained ready to

hand—a bountiful and valuable gift of Nature?.

Certain it is, however, that the earliest examples of engraving show only rude attempts at scratching or scraping designs in outline on comparatively soft stones, the tool or point being of course formed of some substance relatively harder than the stone operated upon.

Possibly the earliest example of engraving upon stone exhibited in this country is to be seen in the British Museum. It is on a peculiar kind of pink-veined marble, formed in the shape of an egg about two and a half inches long, drilled from base to apex with a rather large hole, the object evidently being intended for mounting as the head of a mace or staff of office. This is engraved with a Babylonian inscription which, translated, reads as follows: “I Sargon the King, King of Agade have dedicated (this) to Samos in

8 *Intaglio Engraving*

Sappira." The date of this curious object is fixed at B.C. 3800, therefore about 5,690 years have elapsed since it was shaped and engraven.

We now pass to a period about B.C. 1727 or a little over 3,620 years ago. Here we have a clear record of the signet, and it is alluded to most unmistakably in the book of Genesis (chap. xxxviii.), and as this passage has a direct bearing upon the subject, it is well to consider it somewhat in detail. We are informed that Tamar, the widowed daughter-in-law of Judah, changing her widow's garb for other clothing, and covering her face with a veil in order to conceal her identity, waylaid Judah and enticed him into an illicit intercourse with her, and subsequently obtained his promise to present her with a young goat from his flock, and also extorted from him as a pledge of his sincerity, his staff, his

bracelets, and his signet. About three months afterwards the evidence of her immorality having become apparent, Judah was informed thereof, and not suspecting himself in the matter, forthwith ordered that she should be burnt to death. Tamar then produced the staff, the bracelets, and the signet as a direct accusation against their rightful owner. It may be assumed that the staff alone would scarcely have sufficed to convict Judah, but the signet being doubtless engraved with some inscription, emblem, or device known to be associated with himself, furnished such conclusive evidence against him that he was compelled to acknowledge his guilt. Another interesting consideration connected with the foregoing is that we have the signet mentioned in conjunction with the bracelet, thus bearing out the supposition that at this period signets in the form of finger-rings were totally

unknown, and that they were usually cylinder-shaped stones engraved and worn either attached to the waist, or neck, or pendent from a bracelet.

Strong evidence of the high repute in which engraving on fine stones was held at this time, is found in the record of the art being called into requisition to give its assistance in the construction or ornamentation of the gorgeous breast-plate, caused to be made by Moses in obedience to Divine command (Exod., chap. xxviii.), and to be worn by Aaron the high priest in the magnificent and solemn ceremonies which were thenceforth to become part of the Jewish form of worship. We are carefully informed that three rows of precious stones, four in each row, were engraved, every stone with the name of one of the tribes of Israel, and moreover, that they were to be engraved "like the engravings of a signet." Thus there is unmistakable

testimony that the art was at this time (B.C. 1491) highly appreciated and deemed worthy of taking part in the enrichment of the holy vestments of Aaron, the high priest of Israel.

Although the actual date of the employment of the signet in the form of a finger-ring will remain somewhat a matter of conjecture, there is direct evidence that the Egyptians were acquainted with finger-rings as early as the time of Pharaoh.

We are distinctly informed (Genesis, chap. xli.) that "Pharaoh took off his *ring* from his hand and put it on Joseph's hand," thus not only proving that the finger-ring existed as a royal ornament, but also that it indicated a token of authority even at that remote date (about B.C. 1715).

Subsequently signets in the form of rings became extensively used, and of this fact we have conclusive evidence in

many directions. For instance, in the British Museum are placed the mummified remains of Kabt, or Katebet, a priestess of Amen-ra, on the artificial hand of which may be seen a red cornelian signet ring, engraved with a curious device, the date of which would



DEVICE ON RING.

be about B.C. 800. Still further evidence is recorded in the book of Esther, where (chap. viii. 8-10) the signet in the form of a ring is distinctly mentioned, not merely as an ornament, but also as being actually used for the purpose of sealing, and thereby importing regal authority to a most important state document or decree, B.C. 510.



I.

B.C. 800.



II.

BABYLONIAN CYLINDERS (FROM THE BRITISH
MUSEUM).

100

The art having become of recognized importance, a knowledge of it became in course of time widely spread ; consequently we have numerous examples of different styles, comprising among others Assyrian, Babylonian, Egyptian, Persian, Roman, and Grecian.

Possibly, however, through the Phœnicians the art became eventually known to the Greeks and Romans, and was practised by them, roughly speaking, about B.C. 400 ; they, doubtless, by slightly improving upon the mechanical appliances hitherto in use, as well as by bringing their natural ability and artistic taste to bear upon the art, not only eclipsed all that had been previously accomplished, so far as execution and finish were concerned, but also imparted such grace and beauty to their productions, as to render them for ever worthy of admiration and astonishment.

No subject appears to have daunted

them, however intricate or difficult they reproduced in miniature even to the minutest details, all the beauties of colossal statuary, groups, single figures, heads, and even portraits of contemporary men, women, and children.

We are forcibly reminded of the extreme durability of the engraved gem, when we reflect that some at the present time contained in our museums and collections have been buried in tombs or in the earth ; others have been thrown upon the shore and washed by the sea, or exposed to fire, pillage, and other dangers, but still appearing with the engraving in some instances as clear, sharp, and defined as on the day they left the artist's hands, surely conveying ideas of our comparatively ephemeral existence, and suggesting deeper thoughts beyond those of the elegance of the engraving or the beauty of the stone.

When Constantine the Great removed

the seat of the Roman Empire to Constantinople, A.D. 329, the arts, gem engraving included, naturally followed in his train: but for the space of about 1,100 years succeeding this event intaglio engraving existed rather than flourished, the demand and the taste for engraving on stone having almost disappeared, the art was consequently declining towards total extinction. The subsequent expulsion of the Greeks from Constantinople by Mahomet drove the art back again into Italy, A.D. 1453, where a new and brighter era dawned upon it.

Meanwhile, the ecclesiastics, always anxious to adorn their shrines, altars, plate, caskets, etc., with all that was most beautiful and rare, had secured and utilized the greater portion of the ancient engraved gems, converting them into ornaments and accessories of the Church. To this fact we owe the fortunate pre-

servation of numerous fine specimens of stone engraving now extant.

In many instances the subjects of the gems had to be re-named, and their meanings artfully perverted, on account of their being curiously, if not hopelessly, out of keeping with the sacred character of their new surroundings.

During the twelfth and thirteenth centuries the taste for design had, in fact, become subservient to the Church ; and the subjects chosen for the seals of the ecclesiastical strongholds, cathedrals, abbeys, monasteries, etc., were generally stiff in design and coarse of execution, chiefly consisting of figures in formal robes, seated or standing under Gothic canopies, much cumbersome detail being introduced, and the intervening spaces often covered with a diapered tracery.

These seals bear a strong resemblance one to another, and are of a peculiarly distinct style, displaying a desire to

cover the surface rather than to consider the claims of grace or beauty. They were nearly always engraved upon silver, bronze, or some other metal.

In the fifteenth century, however, the art of engraving on stone found a munificent patron in Lorenzo de Medici, surnamed the "Magnificent," to whom and his successors must be attributed the revival of the taste for gem-engraving. He not only purchased existing works, but also induced artists to settle in Florence; and by his example of enthusiastic admiration, stimulated others to encourage the art and cause it once again to become elevated in style and receive abundant and generous patronage. Consequently towards the middle of that century the stiff and inelegant styles hitherto prevailing began to decline, and classic, graceful composition commenced once more to claim due attention.

18 *Intaglio Engraving*

Giovanni, surnamed Della Corniole, a brilliant master of the art, was notably one who prospered under the patronage of Lorenzo di Medici.

It is easy to conjecture that at this period the art became definitely known as Intaglio engraving, from the Italian term *Intagliare* (to cut into), thus showing how strong a hold the art had attained in the country which had fostered and developed it to the highest state of perfection.

It is not generally known that the Cameo on stone is sometimes produced by the Intaglio engraver, although seldom of equal excellence from the same hand, either of these branches of the glyptic art being quite sufficient for a lifelong study.

The tools and appliances used in the production of the cameo are identical with those required in intaglio engraving, the obvious difference in the mode of

treatment being that where the intaglio design is cut into and below the surface of the stone, the cameo is left in relief by cutting away the surface, in fact, exactly reversing the operation as compared to intaglio engraving.

The cameo, although a highly prized and very beautiful form of the glyptic art, has been chiefly utilized as an accessory to personal adornment. Therefore, from one point of view, it has never quite reached the position, or rendered the service, of the intaglio, which not only serves this same purpose, but also possesses the additional advantage, that, when used as a seal or signet it affords protection to the folded missive and imparts authority to important legal and other documents, and has performed this service from a very early period, as we are already aware.

The sixteenth century was very prolific in gem engravers, and their works

naturally appealed to the artistic taste of the French. Julien de Fontenay, known also as Coldorè, was one of the first Frenchmen to distinguish himself in the art of gem engraving, and several times he executed the portrait of the king, Henry IV., and was also honoured with an invitation to England by Queen Elizabeth for the purpose of producing the portrait of Her Majesty in cameo.

Francis I. was also a liberal patron of the art, and from Italy brought in his suite a renowned engraver of the period, Matteo del Nassaro, the son of a Veronese shoemaker. It is recorded of this engraver that his sense of professional dignity prompted him to give away, or destroy, good pieces of work rather than accept a low rate of remuneration. Under the name of Delnassard he is mentioned in the accounts of the king's privy purse, first in 1528, as receiving royal bounty in the sum of 615 *livres*,

and secondly, in 1529, a further sum of 112 *livres* to reimburse him for money expended in the purchase of tools and appliances necessary in the production of his work.

The desire for the encouragement of both branches of the art subsequently reached England, and continued to command some notice throughout the sixteenth and seventeenth centuries.

About the commencement of the eighteenth century, intaglio engraving received patronage of the most gratifying description in England. Gem collecting now became a mania of the period; collections were formed, and large prices were freely paid for good examples of the art. And towards the close of the eighteenth, and up to the beginning of the present century, the taste for classic design continued.

At this period most artfully contrived imitations were produced, both in

England and on the continent, for the purpose of deceiving the unwary and eager collector.

Counterfeit gem engravings were cast in glass or paste, from well-known works which were also closely imitated in colour ; the fraud, however, was easily detected by testing the back (the front being rarely touched for fear of spoiling the engraving) with a sharp steel point. If the gem happened to be genuine, the steel point would have no effect upon it whatever ; but if the contrary, it would immediately produce a scratch or chip. In order to defeat this test, the imitation gems were afterwards set with a thin backing of cornelian or other stone, the exact colour of the cast ; thus the deception became almost perfect, and detection consequently difficult.

Hundreds of these imitations are in existence, and it would surprise many collectors to become aware of the number

they hold in the innocent belief that they possess the original gem. It has frequently occurred that the author has detected these counterfeits.

Again, during the last century, every artifice was adopted in order to deceive the unwary. Even good old unsigned gems were procured and signed with imitation or modern Greek signatures, and new gems were also produced in considerable numbers, carefully engraved to imitate the antique, and after being finished the surface was rubbed with sand or emery-powder in order to give the effect of age, but this subterfuge did not prove successful: the scratches were too coarse, the effect of *real age* being a sort of dulness on the stone, like the mist produced by breathing upon a polished surface. In Italy the artists arrived at a nearer approach to the desired effect by the ingenious and somewhat cruel device of forcing the gem when

finished (and if not too large) down the gullet of a turkey, where, by mixing with the gastric juice and gritty substances in the gizzard, a satisfactory imitation was arrived at. The bird being confined within certain limits was carefully watched, and if at the end of about three weeks the stone did not re-appear, there was no hesitation about killing and dissecting the unfortunate biped so long as the desired object was attained.

In spite of these attempts at deception, the mania for collecting good works continued. His Majesty, King George III. was a liberal patron of the art, and to the Dukes of Devonshire and Marlborough must be awarded the credit of sparing no expense in order to obtain most beautiful collections not only of antique gems but also works of engravers of the period.

Speaking of these celebrated collections, much to the author's gratification

he received in 1885 an invitation from Devonshire House to view the engraved gems, but was somewhat disappointed to find that they were not openly displayed, but consigned to the comparative obscurity of the "strong room." Nevertheless they are extremely rich, comprising beautifully engraved stones of nearly every kind and period. Lady Louisa Egerton herself in the most courteous manner remarked on many points of interest in the collection, and explained that the celebrated coronet or diadem, formed of intaglio engravings, was on one occasion worn by her ladyship at a grand ball, when, by some mischance, the centre, an engraved stone (signed by Dioscorides and purchased at the cost of £500), became detached from the setting and for a time could not be found. Subsequently it was discovered on the floor under a settee in a corner of the ball-room; thus it had escaped being

either lost or broken, and was forthwith securely re-set in its original mount, and once more safely deposited in the strong room at Devonshire House.

A somewhat curious incident occurred in connection with the celebrated "Marlborough" collection of engraved gems. In the year 1875 it was placed in the hands of the eminent firm of auctioneers, Messrs. Christie, Manson, and Woods, for sale, and duly catalogued, item by item, and exhibited at their rooms in King Street, St. James's. On the day of the sale it was announced from the rostrum that it had been arranged that the collection should not be sold in detail but in its entirety, and that an offer of £36,750 had been made for it; no higher bidder being forthcoming the property was then and there sold at that price. Thus this celebrated collection, which had taken so many years to form, was disposed of in something less than ten minutes.





SEAL OF RING USED BY CHARLES KEAN
IN "SARDANAPALUS."

As a curious instance of sentiment in connection with the signet, it may be mentioned that the late Mr. Charles Kean, while lessee of the Princess's Theatre, and on the occasion of the production of the play "Sardanapalus," caused to be made an exact copy of the metal ring once belonging to that monarch, even to the device engraved upon it.

The celebrated actor asserted at the time that he not only strived to resemble any character he might assume, but also, by the instinct of careful imitation, he always endeavoured, as nearly as possible, to *feel* himself the actual personage he represented, and to gain this result he never neglected to pay the strictest attention to every detail, no matter how slight.

As already mentioned, on account of the encouragement received, numerous excellent engravers of the classic style existed in England, and it would be

well for the amateur to carefully study the productions of two English artists who have never been excelled, viz., Marchant, who for many years studied and worked in Rome, and his successor, Burch, R.A. Their best works range in date from about 1750 to 1814. These artists produced engravings that from every point of view excelled anything that had yet been accomplished. It would be impossible to bestow on such beautiful works higher praise than they really merit.

Many excellent engravers followed, and in the present century London possessed fine artists in Weigall, Bragg, Grew, and many others; but unfortunately, when after all their study and practice their talents had arrived at maturity, the fickle and arbitrary goddess, "Fashion," commenced to frown, where she had hitherto smiled, on the art of intaglio engraving.

It is easy to trace one cause of the apparent neglect of the seal at the present time, by referring to full-length and half-length portraits up to about the latter part of the last century. It will be observed that every gentleman then displayed what was termed his "bunch" of seals. These were generally worn fastened by a gold ring to the extremity of a ribbon attached to the watch, which was carried in the fob-pocket of the knee-breeches, and a portion of the ribbon with the seals dangled outside as a necessary finish to the costume ; and no "Beau" or "Buck" would consider himself fully dressed unless he carried his three, four, or six seals thus displayed, as it was considered that they formed quite as important a detail in his costume as the frills at his wrists, or the buckles on his shoes. These seals were each engraved with a different device, and when used for sealing purposes were

carefully examined, and one selected which would somewhat harmonize with the contents of the missive it was intended to protect.

The gradual changes in the style of costume did much to affect the fashion for the lavish display of the seal, but a still stronger influence was brought to bear when, after the invention of the locomotive, railways became general, and caused a fabulous increase in postal communication, and a prodigious influx of letters to be replied to almost hourly. Sealing consequently became irksome, and on the subsequent adoption of the gummed envelope and the steel embossing die, the necessity for the wax and seal became almost a thing of the past, and the seal (for business purposes especially) was thenceforth regarded more as a toy and a luxury rather than a necessary.

Thus many excellent engravers were forced to abandon the higher style of

art and turn their attention to heraldry and its attendant train of quaint monsters and grotesque deformities. Nevertheless, the sound training which they had already received now stood them in good stead, and they may be credited with having brought heraldic engraving on stone, in England, to a higher state of perfection than it had ever before attained.

The English style became established, and it is satisfactory to be able to record that England is now the recognized centre of heraldic engraving, and no longer is the better class of seal engraving on stone sent to Continental artists for execution.

In order to verify this assertion, it is only necessary to state that the seals of Her Majesty the Queen, the Prince and Princess of Wales, and the other members of the Royal Family, also the seals of the nobility, and, in addition, many,

if not all those, of the crowned heads of Europe have been engraved by Englishmen in London.

The few examples here given are taken from wax impressions direct from the seals which the author has from time to time had the honour of engraving for the members of the Royal Family of England.

I. Seal of Her Majesty the Queen, engraved upon a large white cornelian desk or table seal, presented by the late Czar Nicholas of Russia.

II. Seal of H.R.H. Prince of Wales, from which a replica was made in metal, and afterwards used for sealing trade appointments, etc.

III. Large seal of elaborate design, engraved for H.R.H. Prince of Wales on cairn-gorm.

IV. Seal of H.R.H. Princess of Wales, on red cornelian, engraved on the occasion of her marriage.



I.



II.



IV.



III.



V.



VI.

SEALS BELONGING TO MEMBERS OF THE ROYAL
FAMILY OF ENGLAND, ENGRAVED
BY THE AUTHOR.

PRINTED BY
H. K. B. & CO.
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V. Seal of H.R.H. Princess Christian, engraved from a drawing in Indian ink, supplied by Her Majesty the Queen.

VI. Seal of H.R.H. Princess Henry of Battenburg.

Heraldry, of course, is interesting as a record of official power, or family distinction ; but it yet maintains towards classic design a somewhat similar relative position to that occupied by caricature to the art of high-class painting, but nevertheless possesses many claims for admiration.

Mr. Ruskin, in a letter on this subject to the author, observes, " Heraldic sculpture is simply mediæval sculpture of high and extremely beautiful style ; a Greek Chimæra or Gorgon is a caricature, and a vulgar one, but a thirteenth or fourteenth-century shield is always noble."

Should a reaction in favour of the classic style again arise, intaglio engraving will possibly, after all its vicissitudes, find its head-quarters in England. When once

again the wealthy and refined become impressed with a desire to possess fine examples of the art, collections will be formed, instead of being dispersed, and classic intaglio engraving will again receive that substantial encouragement without which every art must necessarily languish and decay.

Several points should be carefully considered in regard to engravings of classic subjects on stone.

First, the quality of the stone itself is, *generally speaking*, a guide to the excellence of the work, as it is only reasonable to assume that an engraver would *not* voluntarily select an indifferent piece of material upon which to engrave an intricate and delicate subject. But it is well to remember that this is not always a trustworthy guide, as very poor work is occasionally found on very good stones, possibly owing to the want of ability on the part of the engraver.

Sometimes, on the contrary, excellent work has been executed on stones of inferior quality, doubtless owing to the fact that the engraving has been executed to the order of the owner of the stone, which, for some reason, has possessed points of interest in his estimation, although otherwise comparatively valueless.

The next consideration is the treatment of the subject of the engraving. Taking a single figure, firstly observe the general outline, which should always be graceful and in good proportion. Commencing with the HEAD. The face should be expressive of some emotion, and well defined and in excellent drawing; the HAIR—always a test of good work—should be boldly cut in masses and afterwards well finished, and not merely a succession of scratches. The HANDS and FEET, also, should be well and delicately formed, always nicely

defined and graceful. The treatment of the DRAPERY should also be carefully observed. The folds, lines, and creases must be firm and bold, but at the same time give an idea of softness. In subjects where there are more figures than one, the GROUPING should be artistic and elegant, all accessories being judiciously introduced and kept subservient to the main subject.

The following examples indicate some of the points of beauty and interest in connection with a few well-known gems of high artistic merit, and also afford an opportunity for careful study of some of the signatures of the artists, which in these enlargements are perfectly genuine, and have been carefully reproduced.

NO. I. THE FIGURE OF ONE OF
THE MUSES.

From the Strozzi collection, and the work of Allion, evidently copied from



No. I.

an ancient statue. It is engraved upon an onyx, nearly an inch in length, and although slightly damaged, yet fortunately retains sufficient of the subject to admit of due appreciation of the high amount of finish and the beauty of the outline. The drapery it will be observed is treated in a most masterly manner.

No. II. HEAD : ÆSCULAPIUS.

Also from the Strozzi collection. This head, the work of Aulus, is engraved on cornelian, and is a favourite gem, so well appreciated, that in nearly all collections a cast or reproduction of some kind will be found.



No. II.

NO. III. FIGURE OF A GLADIATOR.

The work of Cæcas. This gem, in addition to its high artistic merit, is remarkable for the extreme boldness of the signature, clearly indicating that the artists of that period attributed great importance to their identity with the works which they took such pains to produce.



No. III.



No. IV. ADONIS.

On onyx, the work of Coini. This gem requires but slight comment, the elegance of the *pose* of the figure and the beauty of the work being apparent at a glance.



No. IV.

NO. V. HEAD: AUGUSTUS CÆSAR,
SÓN OF JULIUS CÆSAR.

This remarkable head is perhaps one of the best works of the renowned artist Dioscorides, and was engraved by him upon a fine amethyst, and acknowledged to have been such a striking portrait, that not only was it used by the Emperor himself, but also by some of his successors in commemoration of him.



No. V.

No. VI. DIOMEDES.

Another example of the beautiful productions of the great Dioscorides.



No. VI.

NO. VII. FAUN.

Engraved on a small black onyx by
Nichomarchus.



No. VII.

No. VIII. LOVE TAMING THE LION.

This elegant gem, engraved on sardonyx, has, on account of its beauty, been frequently repeated and enlarged in various substances, such as wood, plaster, china, etc., for decorative purposes. It is believed to have been in the first instance the production of the engraver Plotarch.



No. VIII.

No. IX. MEDUSA.

Engraved on chalcedony by Solon.
The elaborate and clever treatment of
the hair, in combination with the serpents,
claiming especial attention and admiration.



No. IX.

No. X. MEDUSA.

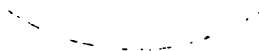
On chalcedony, engraved by Sococles, showing altogether a different treatment of the foregoing subject. The peculiarity of the wings being introduced into the hair having led many to incline to the belief that this head is intended to be that of Perseus.



No. X.

No. XI. APOLLO.

Work of D'Allion, engraved on small
cornelian. Formerly in the collection of
the Duke of Tuscany.





No. XI.

NO. XII. PERSEUS.

By Dioscorides, engraved on an oval
cornelian.



No. XII.

NO. XIII. PRIAM.

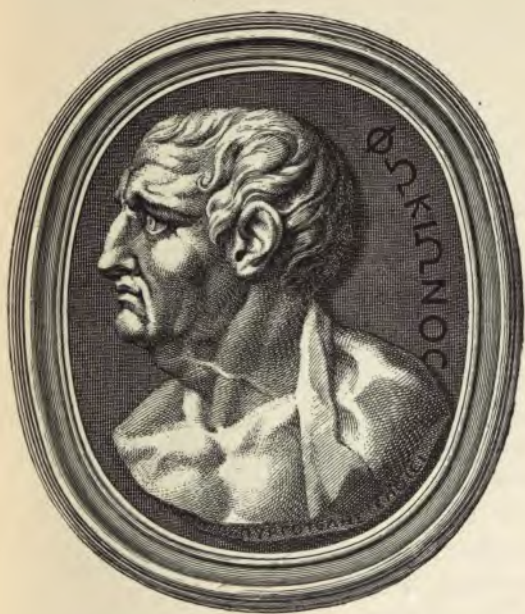
Engraved by D'Action. Taken from
a paste copy formerly in the possession
of M. Philippe de Stosch.



No. XIII.

NO. XIV. PHOCION.

The work of Pyrgoteles. Engraved
on sardonyx.



No. XIV.

NO. XV. MARRIAGE OF CUPID
AND PSYCHE.

This remarkable gem, engraved by Tryphon on a sardonyx, nearly an inch and three-quarters in length, has perhaps received more admiration than very many others. It is noted for its extreme finish. It will be observed that the engraver has succeeded most happily in indicating the thinness of the veil, and that the features, although covered, are yet clearly discernable. This, as may be imagined, is a most difficult effect for any artist to attempt to obtain upon stone.

The design of this gem has been copied and utilized in many directions, and was a very favourite subject with the celebrated Josiah Wedgwood; con-



No. XV.

F

66 *Intaglio Engraving.*

sequently it is well known to collectors of the best specimens of his ware.

The elegance and refinement of the whole composition must naturally appeal to all lovers of fine art.

Having thus far discussed the subject from the historical point of view, we will proceed to the interesting study of the delicate and intricate methods by which engraved gems are actually produced.

PART II.

PRACTICAL.

IN commencing to describe the practice of the art of gem engraving it will be necessary to bear in mind that the earliest attempts were but mere scratchings of the design in outline, and therefore termed "engraving with the fixed point."

In the infancy of the art, however, it must have become evident that the fixed point alone was far from capable of realizing the intentions of the artist ; no depth or rotundity could be produced, and where the stroke desired became wider than an ordinary scratch, it could only be etched or scraped out by the expenditure of infinite pains, time, and

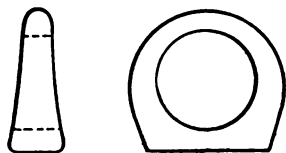
labour, and even when completed presented but a rough and unsatisfactory result.

Meanwhile the harder and finer stones had been successfully conquered by the lapidary, who at that time produced work which would even at the present day be considered of very fair quality, and compared to which the engravings of the period were but poor and feeble productions.

On examining the form of the cylinder and that of the Scarabæus, which are not easily produced, and the long hole with which the cylinders were pierced from end to end, one is forced to admit that they would prove far from an easy task to a lapidary of the present day, with all the advantages of modern appliances at his command.

Rings formed from *one piece* of stone also offered difficulties which were successfully overcome by the lapidary.

These stone rings conclusively prove that the ancients were acquainted with the use of two or more kinds of drills capable of boring holes in hard stones. Many of these objects were intended to be worn with merely a string passed through them, and in these instances



STONE RING.

the hole is small and bored with a drill which worked through the stone by simply grinding the substance away in the form of powder or paste, while those drilled with a hole sufficiently large to admit the finger were cut out with the *tubular* drill. This being, as its name indicates, a drill formed of a tube, the

edge or extremity of which was the cutting portion. The effect of the action of this instrument is at the commencement to work a circle upon the surface of the stone, which circle, being gradually deepened by the rotary motion, eventually penetrated quite through the substance, and produced the necessary hole by displacing the piece of stone in the form of a pellet or disc, which of course varied in circumference according to the size of the drill selected for use.

Thus, we may surmise, it became evident to the engraver that, by obtaining a rotary motion for his graver, and by substituting diamond or corundum powder, or paste, in place of the old-fashioned fixed point, and also by using more effective appliances, he would be enabled to bring his art to bear upon the harder stones, and also to introduce a more extended range of subjects, and, in fact, be prompted to adopt and prac-

tise what proved to be the *true* art of engraving on fine stones.

The lapidary, however, must *not* be confused with the engraver, the two arts being widely different ; and, just as the sawyer prepares the wood for the finer and more finished handling of the cabinet-maker, so the lapidary shapes the stone from the rough block, and where his work concludes the more difficult and artistic taste of the engraver commences.

Engraved cylinders have been discovered in large numbers, and afford most interesting subjects for contemplation and study. They generally measure about two inches or less in length, a hole being drilled completely through from end to end sufficiently large to admit a cord by which they could be strung or attached, as already described ; others having a metal pin, with a loop at the upper end, passing through the entire

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length of the stone, and fixed by a small metal disc at the lower extremity.

The design generally engraved upon a cylinder almost covers the upright



‘CYLINDER.

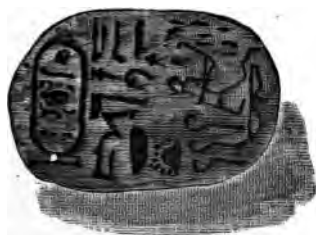
space, and extends round the surface. Thus, in order to obtain an impression, it is necessary to roll the cylinder one entire revolution upon the substance to be impressed before the design can be completely discerned.

The engraved stone Scarabæi, so

greatly esteemed by the Egyptians, and even regarded by them with feelings amounting to almost superstitious awe,



A SCARAB (UPPER SIDE).



A SCARAB (UNDER SIDE).

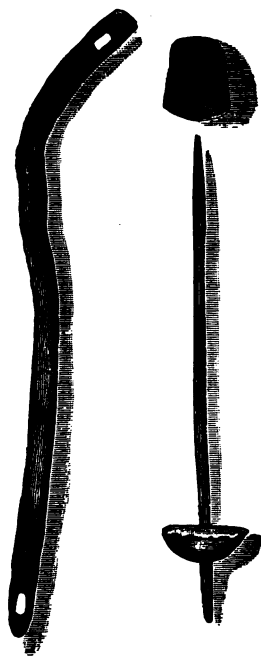
have also been discovered in large quantities ; although varying considerably in point of size and artistic merit, they are

nevertheless extremely interesting, their form being generally well cut in *cameo*, while the inscriptions and devices upon them are engraved in *intaglio*.

The true secret of the art of engraving on hard stones having been discovered, the necessary rotary motion became of the utmost importance ; and of the ingenious manner by which it was obtained we have conclusive evidence.

Although no actual delineation of an *engraver* employed at his art exists, there is in the British Museum a portion of a fresco found at Thebes, and belonging to a period about B.C. 1650, in which are delineated the figures of some goldsmiths engaged in using the *bow-drill*, showing the action of this simple instrument most unmistakably.

The drill, roughly speaking, consisted of an upright spindle, kept in position by the workman with his left hand, while in his right he held a bow, one



BOW AND DRILL WITH THIMBLE.

turn of the string of which was passed around the drill, the bow being alternately drawn and propelled backwards and forwards caused the drill to revolve rapidly. Beyond this evidence we have fortunately preserved to us the several parts of an actual drill used by the ancients, the action of which is identical with the one just described, with the exception that, instead of being grasped by a central socket, it is held upright by the aid of a small hollow block of wood shaped like a thimble, which not only served as a *bearing*, but also protected the hand of the workman from the action of the upper end of the stem of the drill.

But the important discoveries of the utility of rotary motion and the crushed diamond or other hard substances were at first used but sparingly, and even timidly. Thus we find in the Egyptian and Assyrian cylinders the chief points in the design, such as the outlines of the

body, the joints, elbows, ankles, ends of the hair, etc., were indicated by the use of the *round-headed* drill, and that the disc-shaped tool must have been used for hollowing out the figure, and used again in various sizes for the purpose of adding the arms, feet, and fingers ; but the fixed point was still largely employed in finishing the details, such as the folds of the dress, portions of the hair, and the minute accessories and ornaments.

Cylinders are also interesting from the fact that on careful examination they disclose a peculiar class of treatment scarcely to be found elsewhere, and when we consider the amount of trouble entailed in cutting a design on a rounded surface, merely a portion of which could possibly be visible to the artist at one time, and yet should show in the impression a complete and harmonious subject, the difficulty of the task becomes apparent.

The following examples, taken from cylinders in the British Museum, will serve to demonstrate how successfully these difficulties were overcome.

No. I. Cylinder formed of pinkish cornelian, Assyrian work, about B.C. 800. Subject, a king standing before the sacred tree, and holding conference with two personages, evidently of exalted position, probably ambassadors. This work shows the free use of the round-headed drill, and in the finer lines the fixed point is brought to bear, and is specially noticeable, in the details of the dresses.

No. II. This elaborate work carries no inscription to give any indication of the meaning of the subject, which consequently becomes rather a matter of conjecture. One curious incident will be observed of a man, or mythical personage, engaged in strangling at one embrace two antelopes. The whole

work indicates how carefully the ancients could perform such a task, and succeed by earnest application in producing a high amount of finish, by the aid of what would now be considered rough and inadequate appliances. This cylinder is formed of gray chalcedony.

No. III. This curious work, sharply cut in hæmatite, represents the central figure in the act of offering a gazelle for the acceptance of a god, and in the presence of a divine attendant.

No. IV. Limestone cylinder, Hittite work. This, if critically examined, will be found to contain much denoting the quaint sense of perception on the part of the artist. It represents a lion and lioness attacked by ferocious dogs. The lioness, it will be observed, having vanquished one dog, which is running yelping from the contest, is now enraged at having to face a second hound. The lion, meanwhile, is being attacked by

two dogs, and disdaining to sacrifice his dignity, boldly stands his ground fully prepared for the fray. The six animals forming the subject, although much worn away by the action of time, still show an intimate knowledge of anatomy on the part of the engraver.

In making use of the disc-shaped tool—the *edge* only of which is of service—the revolving portion of the instrument would require to be held sideways or horizontally, and, therefore, to insure the necessary steadiness, *must* have been supported by some kind of bearing, thus dimly foreshadowing the lathe of the present day.

Whatever may have been the shortcomings and defects of the rotary tools employed by the Egyptians, Babylonians, etc., in engraving such stones as cornelian, agate, or jasper, certain it is that they cut with remarkable keenness. Some of the cylinders especially show

distinct evidence of the tool having slipped over the outline, producing here and there false cuts of considerable depth ; therefore, when we reflect that the engraver would not have allowed the tool to stray a second time at the same spot (to the possible ruin of his design), we may conclude that these unfortunate gashes were produced at one stroke, fully proving that the tools at this period were quite capable of coping with hard stones.

Passing to the times of the early Greek engravers who congregated chiefly in the Isle of Samos, about B.C. 570, and there vying with one another, brought the art of gem engraving to a high state of excellency. We are informed they sought "fame rather than riches," and in this aim they were certainly wiser in their generation than the majority of their successors of the present day, who, probably seeking both, generally fail to obtain either.

Dioscorides, the celebrated Greek, practised his art during the reign of Augustus, with such success that his name is still honoured as that of an engraver of the highest reputation. From the quality of the work produced at this period, we may safely infer that the glyptic art had adopted improved appliances, as they from time to time became known, and the nature of which Pliny was evidently aware, when he mentions the incisive properties of the crushed or splintered diamond, and also the peculiarities of some revolving instrument or drill, capable of producing satisfactory results, and which was evidently the precursor of the modern lathe.

In proceeding to describe the lathe as now used by gem engravers, it must be understood that scarcely two are to be found alike, a desire to improve upon already existing models having led to

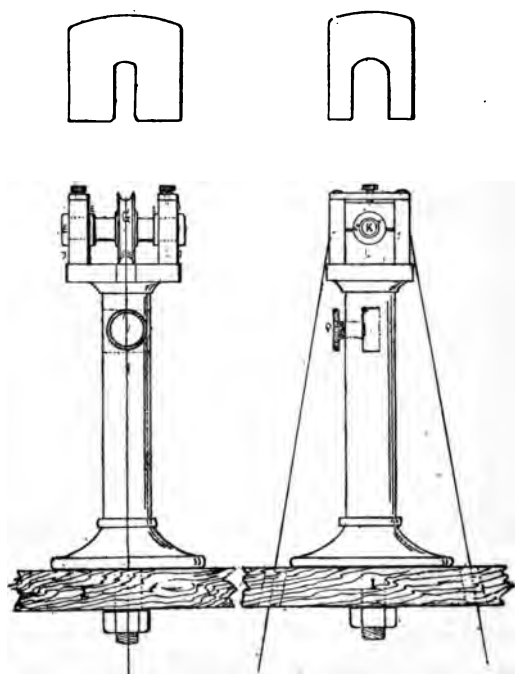
variety of form and detail, therefore those now in vogue differ considerably from many in use even so recently as a century since.

The engraver's lathe now consists of an upright metal pillar about eight inches in height, in the head of which is placed a hollow mandril which revolves easily and in perfect *truth* or precision in accurately adjusted bearings. It is kept in position by collars, the pressure of the upper bearings upon the mandril being regulated by thumb screws. Encircling the middle part of the mandril is a grooved wheel for the reception of a cat-gut band which passes downward through apertures cut in the top of the work-table or bench, and is connected with the driving-wheel beneath, which is driven by means of a pedal.

The head of the lathe when in use is covered with a movable cap, and a conical hole passes through the entire length of

the mandril into which the tools are inserted.

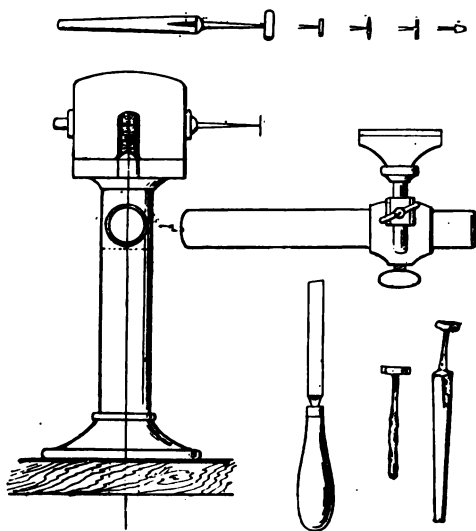
The tools are made of soft and well-annealed iron, cast firmly into pewter or type-metal butts or stocks. The mould in which they are formed is internally an exact counterpart of the conical hole in the mandril, with the exception that it is a little longer at the smaller end, thus causing the smaller end of the tool to project slightly when in the mandril, consequently it is easily pushed out when necessary, and quickly exchanged for another. The iron, before being cast into the stock, is roughly shaped with a file and afterwards *tinned* in order to insure its thorough adhesion to the type-metal; and after being taken from the casting-mould it is of course in a rough and unfinished state. To correct this it is placed in the mandril, and, after being straightened as truly as possible, a metal *rest* is affixed to the upright pillar and a



ENGRAVER'S LATHE WITH MOVABLE CAP
ABOVE.

sharp-edged graver or chisel is brought to bear upon the tool while the mandril is quickly revolving. This soon renders the tool perfectly circular and ready for the application of the diamond paste in order to invest it with the necessary incisive power. It should be added that the heads of the tools are turned of various shapes and sizes, some being as large as a sixpence, others as fine as a pin's point, and the number required by an engraver employed upon ordinary subjects is generally about one hundred.

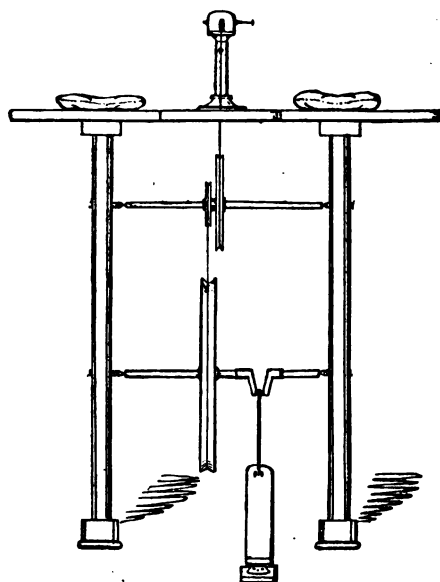
It should be mentioned that, while the Continental engravers on stone have been in the habit of *sitting* to their work at a kind of low table, the English have preferred to *stand* at a high bench, and thus the greater space between the floor and the under side of the top of the bench enabled them to introduce a small appliance called the "multiplier," which



ENGRAVER'S LATHE SHOWING THE REST AND
VARIOUS TOOLS, THE LATTER IN UNFINISHED
AND ALSO FINISHED STATES.

consists of two wheels, one larger than the other, placed side by side, and both fixed to one spindle, the band from the driving wheel passing over the smaller wheel, and from the larger to the small grooved pulley, forming part of the mandril in the head of the lathe. Consequently the engraver obtains, when desirable, a very high rate of speed without increased action on his own part, and therefore he is able to maintain a firm attitude, which is very necessary to him when engaged on fine work ; beyond this, he rests his elbows upon two cushions in order to insure perfect steadiness.

The work-bench should be firmly fixed at a window (northern aspect preferable) or under a skylight ; and should the sunshine occasionally fall upon the work and cause a glare, and consequently become trying to the eyes, a movable blind, made of clean white tissue paper,



ENGRAVER'S LATHE WITH BENCH, MULTI-
PLIER, AND DRIVING-WHEEL COMPLETE.

can be easily interposed and quickly removed when not required.

The next consideration is the preparation of the stone for engraving ; and we will suppose that it is mounted in a seal or ring. After the metal portion has been enveloped in gold-beater's skin (wetted and left to dry upon it in order to protect it from possible scratchings), the stone is turned face downwards upon a steel plate slightly charged with a small quantity of finely ground diamond ; it is then gently rubbed upon this plate until every sign of polish has disappeared, and a dull roughness been produced in its stead.

The ring or seal is then fixed in a light wooden clip about four inches in length, the object of this arrangement being to enable the engraver to hold his work both gently and firmly. Then with a piece of brass wire, sharpened to a very fine point, any design can be drawn upon

the surface of the stone, on the principle of the slate and pencil, and, when correct, is ready for engraving. This explanation applies also to *unmounted* stones, with the exception that instead of being placed in the clip, they are cemented on to the end of a wooden handle.

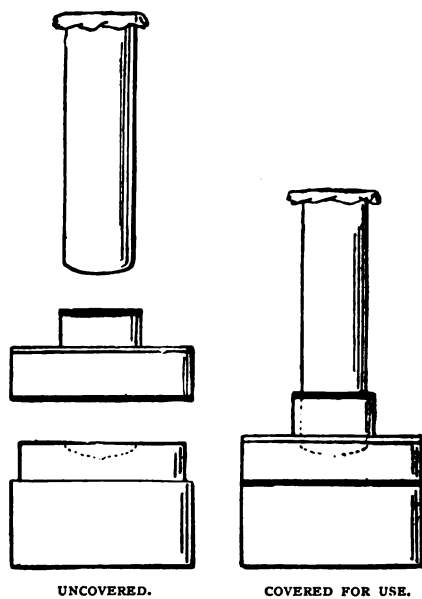
The foregoing diligent course of preparation would be, however, of little avail without the subsequent aid of the diamond, which is prepared for application to the tool in the following manner. A piece of diamond is crushed, pounded, and ground between a closely-fitting and finely-tempered steel pestle and mortar, a little olive oil being added ; the diamond quickly becomes a dark gray-coloured paste, which, on being applied by the aid of a small spatula to the tool, enters into the surface of the soft iron and immediately converts it into a kind of small keen grindstone, capable of

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cutting all hard stones, the diamond even included.

The stone having been prepared for engraving, as just described, is gently and steadily pressed by the engraver against the under side of the revolving tool, which immediately commences to act upon it, and enables the artist by the exercise of judgment and skill to produce the various depths, shallow and delicate undulations necessary for the development of his design.

When finished, the engraving is sometimes polished inside, which result is effected by taking a piece of quill sharpened to a point, with which and some finely-ground diamond the whole of the work is gently rubbed until it becomes perfectly smooth. It is then submitted to the action of a revolving and rather stiff brush fixed in the lathe and dressed successively with polishing powders, tripoli, poutée, and, finally



STEEL PESTLE AND MORTAR FOR CRUSHING
THE DIAMOND.

rotten-stone. A circular guard is placed around, and close to the brush, to prevent the powder or paste becoming splashed or scattered.

The foregoing process, however, is seldom applied in the present day, the fashion being to allow the engraving to remain dull, the polish being replaced on the surface of the stone only, which is accomplished as follows :

The stone is held face downwards upon a horizontally revolving pewter plate about one foot in diameter, upon which is placed rotten-stone moistened with water ; this quickly reproduces the brilliant polish which, as already described, had been destroyed for the purpose of allowing the subject to be drawn upon the stone.

The engraving is now ready for producing a handsome impression. It must, however, be borne in mind that for sealing purposes it is useless to employ

superior work, unless a good impression can be taken from it, the unsightly blotch of burnt wax generally seen upon a letter being a complete absurdity, and apparently intended to obliterate any artistic merit the seal may possibly have possessed, details being altogether absent and the design not discernable with any degree of certainty. Although it is almost impossible to obtain a really fine impression in wax upon a letter, some of the following directions may be utilized with advantage.

Before commencing, however, it would be well to consider what constitutes a good impression. (1st) It should exhibit every line of the engraving and be perfectly clear and sharp. (2nd) It should be bright and pure as regards colour. (3rd) It must be flat, not curled or warped. (4th) It should, for cabinet purposes, be nicely trimmed or shaped at the edges.

To obtain these results, take the seal, and, with a fine brush and soap and water, thoroughly clean out the engraving. Then when the latter is dry, take another brush which has been slightly oiled, and with this work into the engraving until there is just the merest gloss of grease distributed over all the lines. Next, with a camel-hair pencil, dust some of the finest Chinese powder vermilion into every part of the engraving, then blow into the work in order to disperse any superfluous powder. Owing to the slightly greased surface, just sufficient will remain to cause the stone to release itself from the wax, and also to impart an agreeable dulness to the work.

Having thus prepared the stone, take a piece of cartridge paper (not cardboard, as it generally warps and causes the wax to crack when cold) about an inch larger all round than you wish the impression

to be. Hold it in the left hand over a gas jet or the flame of a candle, and having warmed the paper take the stick of wax in the right hand and turn it quickly between the thumb and finger above, not in, the flame, and when the end of the stick is softened, turn as much as will leave it on to the paper. When sufficient has been obtained, hold it over the light, allowing the flame to almost touch the under side of the paper, thus causing the wax to gently simmer on the upper side. Now take a piece of wire about three or four inches in length and gently stir the wax in order to get rid of the air bubbles which are sure to appear, also to spread the wax into a circle, the size of which will depend upon the width of border required around the engraving. In stirring it, leave a little more wax in the centre than at the edges. Warm the stone slightly so as not to chill the wax too suddenly and

prevent it flowing into the fine lines, and having put the paper on a flat surface, firmly press the stone into the centre of the wax, leaving it a few seconds before *gently easing* it from the wax. The impression must now be placed under a weight to keep it quite flat until cold. The weight must of course be hollow in the centre, so as to press at the edges only. If the stone has been made too hot the design will appear pulled and distorted, and may adhere in some places to the stone, or if either the wax or the stone has been too cold the impression will not show perfectly the finer parts of the engraving.

It should be borne in mind that the wax must be of superfine quality (red is generally the best) and that on no account should it be allowed to scorch, or drop through the flame, as this spoils the wax and also causes it to become discoloured. When the impression is

perfectly cold, it can be trimmed into any shape by the aid of a pair of keen scissors.

As just mentioned, if the seal be made too hot the wax will adhere tightly to the work; and many good engravings have been irretrievably ruined by being chipped or broken by fruitless and dangerous endeavours to pick out or otherwise dislodge the wax. Nevertheless the following is a perfectly safe and easy means of getting over the difficulty:

Take a piece of cotton wool or thick flannel, and well saturate it with methylated spirit; then turn the seal face downwards upon it, and leave it until the wax assumes the consistency of paint; when it may be easily brushed away, without risk of damage to the finest work.

On the first introduction of the gummed envelope many doubts were expressed concerning its practical value,

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and it was contended that it did not offer the absolute security of the wax impression, and it was further maintained that an envelope properly *gummed* and afterwards *sealed* with wax, the combination of the two fastenings would render the missive inviolable and perfectly protected. Let us for a moment consider whether this surmise was correct. In course of time some important and treasonable documents, inclosed in envelopes, gummed and sealed in the manner indicated, caused suspicion in the minds of certain authorities, and it was determined in the interests of justice that their contents should be examined and the envelopes re-closed without the knowledge of the senders, or raising the suspicion of their confederates. The ingenious manner in which this was accomplished was as follows : The letter was first placed upon a hard flat slab of marble, a small piece of cold soft lead



about the thickness of a penny was then laid over the wax seal, a smart blow with a mallet on the upper side of the lead caused a sharp impression of the seal to become indented on its under surface. The lead was next carefully trimmed with a penknife up to the edge of the original seal (not the overflow) and then placed aside. Next the blade of a palette-knife, thin and wide, was made warm and inserted under the seal upon the letter; and in this way the whole of the wax was carefully removed, leaving the gummed tongue of the envelope exposed. This was then placed over a jet of steam, issuing from the spout of a kettle of boiling water, causing the gum to soften. The envelope was then easily opened, the contents brought to view, and after being copied were replaced and again fastened as follows: a little fresh gum was used to stick down the flap of the envelope in its

original position, the wax which had been carefully placed aside was stuck upon the end of a fresh stick, nearly of the same colour, and again melted and placed very carefully, both as to size and shape, upon the spot from which the original seal had been taken. The leaden imitation seal was then impressed upon it; and consequently the letter was re-sealed, not only with an exact copy of the seal, but also with the identical wax with which it was originally fastened, thus rendering the operation complete.

Reverting to the art of engraving, it will be well to devote a few moments to the consideration of a branch of engraving which, about the middle of the present century, received considerable attention, viz., coloured engravings in crystal.

Rock crystal, when carefully selected, is beautifully clear and transparent, and

therefore admits of being engraved with designs not intended for sealing purposes, but when finished to be viewed *through* the crystal. Although the idea of colouring engravings on transparent stones is far from new, nevertheless, it had not been taken thoroughly in hand until about 1860. In 1862, a fine assortment of these engravings (executed by the late Mr. Charles Cook) were shown in the International Exhibition of that year.

In engraving crystal for the purpose of being afterwards painted, the engraver obtains the advantage of being allowed, for the sake of effect to *under-cut* the subject, or in other words, to engrave his design at a deep and acute angle to the surface. This cannot be attempted on a seal, for the obvious reason that it would not leave the wax, and as the subject is intended to be viewed *through* the crystal, the more it

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is developed by undercutting, drilling, etc., the better the effect becomes when coloured.

It will doubtless appear strange, especially to those acquainted with painting on canvas, etc., that in crystal work, the subject being *painted from the back* in oil colour and *viewed from the front*, necessitates its being painted backwards. Thus the high lights, and such portions of the subject as would form the *last* touches in oil-painting are with the crystal painter the *first* to receive attention. This branch of the engraver's art has received satisfactory encouragement, Her Majesty the Queen and the members of the royal family having largely patronized it. Incidentally, it may be recorded that on the occasion of the marriage of H.R.H. the Princess Louise, the centres of all the bridesmaids' lockets were formed of engraved and coloured crystals.

These crystals were engraved by the author, from a design supplied by Her Royal Highness herself, and were very effective. The flowing ribbon (shown in the accompanying engraving) was



coloured a deep blue, the lettering and edging being gold, and the inner sides of the folds of the ribbon a rich buff colour, the sprays of roses and forget-me-nots in natural colours. They were mounted very tastefully in settings of Holbein character, and one of them at

least is now preserved in the collection of the Marquis of Salisbury at Hatfield.

And now a few words will not be misplaced respecting the diamond, the most important agent in the production of gem engraving.

In its rough state (termed "Bort," or "Boart") the diamond presents a very different appearance to the bright and sparkling object it becomes after undergoing the processes of cutting and polishing. In fact, as nearly as can be described, it generally resembles pieces of gum-arabic slightly coated with black-lead.

Many absurd statements have been made respecting diamonds, and various methods have been advocated for the detection of the spurious from the real stone. For instance, it has been seriously asserted that if a real diamond be taken to the top of a high building, and then

allowed to fall with full force on to the pavement below, the diamond remaining unbroken by the severity of the test proclaims itself a veritable stone. Again it has been stated that if a diamond be placed upon an anvil and struck smartly with a hammer, either the anvil or the hammer should have become indented by the violent contact with the diamond, while the stone itself should remain perfectly uninjured, thereby affording conclusive evidence of its genuineness. It is scarcely necessary to assert that such ideas are mere fables and totally in opposition to the truth, the fact being that the diamond, although so hard, is really a *brittle* substance, easily broken, and, as before-mentioned, reduced to powder when required.

The ancients were content to wear the diamond in its natural state, until the art of cutting and polishing had been discovered, the first successful

attempt in this direction being accomplished about the year A.D. 1476.

To many unacquainted with the subject the idea may naturally suggest itself that *if* the diamond is capable of being facettèd and polished, it follows that but slight obstacles would be offered to the subsequent treatment of the engraver. But it should be borne in mind that an enormous difference exists in the conditions between the fine art of engraving, and the comparatively rough process of cutting and polishing.

In facetting and polishing, the desired results are attained by the aid of powerful machinery, the diamond being subjected to the action of a quickly revolving circular plate of metal "dressed" with diamond paste, and generally offering a surface more than a thousand times larger than the stone under treatment.

The engraver, on the contrary, is

placed at the obvious disadvantage of being compelled to employ weak and delicate instruments, necessarily *far smaller* than the surface on which he purposes to work. Consequently it has frequently been asserted that the so-called engraved diamonds are really some other description of hard stone (such as the white sapphire), and that the engraving of a veritable diamond must ever remain a task of utter impossibility.

In commencing to engrave a diamond in the ordinary manner adopted towards hard stones the difficulty of the task becomes at once apparent, the tool slipping aimlessly about the hard surface of the stone and the head of the tool becoming burnished, and consequently perfectly inert, while the diamond paste with which it is dressed becomes dispersed without producing the slightest effect.

It is therefore necessary to adopt some method by which the tool should be made to revolve steadily upon one spot, and also to prevent the incisive paste escaping from between the edge of the tool and the face of the diamond.

To gain this result the diamond in question was coated with a thin film of varnish, which, when nearly dry, was by the aid of a fine camel-hair brush brightly polished with black-lead powder, and then subjected to the action of an electro-battery, and by this means covered evenly with a thin layer of copper. The design was then drawn upon the copper, the surface of which the tools easily pierced down to the face of the diamond, and in this manner the desired result was attained, the head of the tool being kept in position by the copper surrounding it, which also formed a channel, and thus prevented the diamond paste from escaping.

After being subjected to the action of a tool revolving at a speed of about 3,000 per minute, a slight cut became visible in the surface of the diamond, and by persevering in this mode of treatment the engraving of the design was ultimately accomplished.

That the result was not attained without a considerable expenditure of time, patience, and materials may be inferred from the following :

The stone in question, before the engraving was commenced, weighed exactly $2\frac{8}{16}$ carats, the strokes of the design taken as a continuous line measured twenty-seven millimètres. When the engraving was completed and the stone again weighed, it was found to have lost only the *forty-second* part of a carat, and that in order to displace this small quantity no less than $3\frac{1}{2}$ carats of crushed diamond had been consumed, and *eighty-six* hours of actual time expended.

When the copper was removed from the face of the stone, it was discovered that the strokes of the design, a Siamese monogram, had a slightly furred or rough appearance at the edges, it therefore became necessary that the surface should be re-polished, and for this purpose it was sent to the diamond mills where a fresh surface was given, and the engraving thereby greatly improved in appearance.

Even after the task of engraving had been accomplished, there were some who, not having actually seen the stone, were still rather sceptical in the matter, and inclined to contend that it could not be a diamond, or, if a diamond, one of an exceptionally soft nature, etc., etc.

In order to set the matter finally at rest, Messrs. Ford, the diamond polishers, were asked to give their opinion on the hardness of the stone, with the following result.

“ENGLISH DIAMOND MILLS,
19, CLERKENWELL GREEN,
March 3rd, 1887.

“Dear Sir,

“In answer to your questions, I will guarantee that the engraved stone which you sent to us to polish on the surface is not only a diamond, but an Indian diamond of the hardest description.

“It was given to one of the finest and quickest diamond polishers in the world, and everything that could possibly be done in order to finish the work rapidly was tried, but the stone was so hard that it was some time before the slightest impression could be made on it, but by great persistence it was eventually finished after *eight hours'* work. Had the diamond been one of the ordinary kind, that is, of a lesser degree of hardness, *four* hours would have been quite sufficient for the purpose. I remain,

“Yours truly,

“LEWIS ATKINSON,

“*Manager.*

“To MR. ED. RENTON.”

By contrast, as a further proof of the extreme hardness of this diamond, it is interesting to mention that an exact *facsimile* of it was made in white crystal, the engraving of which occupied *less than half an hour*, and required scarcely one-hundredth part of a carat of crushed diamond for its production, or *less* than half the weight of the substance removed, while the diamond, as already described, consumed 147 times *more* than the weight of stone displaced.

In the foregoing description of the practice of the art of Intaglio engraving I venture to acknowledge that I have purposely left many of the difficulties which the artist has to contend with entirely to the imagination. It must be borne in mind that the material to be worked is of a most unyielding and stubborn character. Too much fulness of outline, or any trifling mistake committed during

the progress of the work, possibly entailing the utter ruin of the whole subject, consequently close and unremitting attention is required of the engraver, taxing to the utmost the combined powers of steady hands, keen eyes, and a clear brain.

To those who take real interest in the matters discussed in the foregoing pages, and who may be desirous of gaining further knowledge on the subject, I would recommend frequent visits to public collections. For instance, the engraved gems in the British Museum are admirably arranged for inspection, and this equally applies to the South Kensington Museum, and the "Mayer" collection in Liverpool. These, carefully studied, will pleasantly occupy many weeks, months, or even years, according to the amount of time at the disposal of the student.

The "Devonshire" collection, also, contains some of the most beautiful examples of Intaglio engraving in this

country, and, although private property, the connoisseur need scarcely despair of obtaining a view of these works, as I have discovered from experience that His Grace the Duke of Devonshire, like many other owners of almost boundless treasure, is generously inclined to gratify the curiosity of those who approach the matter judiciously and are really interested in the subject.

An almost invariable result of taking an interest in the subject of Intaglio engraving is a desire to possess some choice examples, for the gratification of "self and friends." To attain this end, I would advise inquiry at pawnbrokers' and dealers' shops, where old articles are offered to buyers, and also attention to sales by auction, where occasionally a good gem may be secured at a very moderate outlay. Many good engraved gems can, at the present moment, be rescued from obscurity and become the

prizes of those who are willing to devote their spare moments in making diligent search for them.

In conclusion, I may mention that in placing the foregoing facts before you I have derived a considerable amount of pleasure, and trust I have afforded some gratification to the reader. Also, I beg to intimate respectfully that the device given below (copied from a seal) is *not* intended as a gentle hint that the reader and myself should *cut* our companionship, but, on the contrary, I hope



